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EXAMINER
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NEURAUTER, GEORGE C

ART UNIT	PAPER NUMBER
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2143

DATE MAILED: 03/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/966,229

Applicant(s)

AGARWALLA ET AL.

Examiner

George C. Neurauter, Jr.

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 09272001.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 2143

#### **DETAILED ACTION**

Claims 1-48 are pending and have been examined.

#### ***Claim Objections***

Claims 2 and 13 are objected to because of the following informalities:

Claim 2 recites the limitation "second naming format." In order to avoid antecedent basis issues, this limitation should be "second identification format".

Claim 13 does not end with a period.

Appropriate correction is required.

#### ***Drawings***

Figures 3 and 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Art Unit: 2143

**35 USC 112, 6<sup>th</sup> paragraph Interpretation**

A claim limitation will be interpreted to invoke 35 U.S.C. 112, sixth paragraph if it meets the following 3-prong analysis:

(A) the claim limitations must use the phrase "means for" or "step for";

(B) the "means for" or "step for" must be modified by functional language; and

(C) the phrase "means for" or "step for" must not be modified by sufficient structure, material or acts for achieving the specified function.

The system of claims 45 and 46 meet this 3-prong analysis, therefore, these claims will be interpreted to invoke 35 U.S.C. 112, sixth paragraph. One skilled in the art can identify the corresponding structure, material or acts in view of the written description provided in paragraphs 0016-0020. See *Atmel*, 198 F.3d at 1382, 53 USPQ2d 1231 and MPEP 2181, section III.

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the

Art Unit: 2143

art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1-41 and 44-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in

Art Unit: 2143

view of Applicant's admitted prior art in view of US Patent Application Publication 2003/0041093 to Yamane et al.

Regarding claim 1, Applicant's admitted prior art discloses a method of addressing a name space mismatch between content servers and content caching systems, comprising steps of:

    caching one or more content elements in a content caching system, wherein the cached elements are identified using a first identification format ("URL") (page 7, line 13 - page 8, line 2, sentence beginning "Content caching systems use a name space..." of the instant application).

    Applicant's admitted prior art does not expressly disclose automatically learning mappings between a second identification format and the first identification format and using the mappings to update one or more selected cached content elements by requesting updated versions of the selected cached content elements from a content server, wherein each request identifies one of the selected cached content elements using the second identification format, however, Applicant's admitted prior art does disclose mappings between a second identification format and the first identification format (page 13, line 10 - page 14, line 11, sentence beginning "Content servers of the prior art...") and updating one or more selected cached content elements by requesting updated versions of the selected cached

Art Unit: 2143

content elements from a content server, wherein each request identifies one of the selected cached content elements using the second identification format ("file name") (page 8, lines 3-17, sentence beginning "If notification 310 indicates...").

Yamane discloses automatically learning mappings ("change list" or "modification list") in the first identification format (paragraphs 0010 and 0091) and using the mappings to update one or more selected cached content elements by requesting updated versions of the selected cached content elements from a content server (paragraph 0089, sentence beginning "Based on the request and its own configuration..."; paragraph 0090, sentence beginning "It is therefore useful to use change lists..."; paragraph 0091, sentence beginning "The additional step of notifying...").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of these references since Yamane discloses that automatically learning mappings and using the mappings to update cached content elements enables the content caching system to serve the most recently updated files from the content server (paragraph 0090). In view of these specific advantages and that the references are directed to content caching systems, one of ordinary skill would have been motivated to combine these

Art Unit: 2143

references and would have considered them to be analogous to one another based on their related fields of endeavor.

Applicant's admitted prior art and Yamane do not disclose automatically learning mappings between a second identification format in the first identification format, however, Yamane does disclose automatically learning mappings that are converted from the second identification format ("file" or "directory") to the first identification format (paragraphs 0092 and 0093) and that the content server automatically learns mappings between a second identification format and the first identification format (paragraph 0069).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Applicant's admitted prior art and Yamane to have mappings between a first and second identification format since Yamane discloses that the mapping converted from the second identification format that only includes the first identification format allows the content caching system to efficiently utilize the mapping (paragraph 0092). One of ordinary skill in the art would recognize this advantage and, since Yamane discloses that an entity such as a content server from which the content caching system retrieves content receives a mapping of similar configuration, found it obvious to modify



Art Unit: 2143

Yamane to include the second identification format in a mapping that is sent to the content caching system.

Regarding claim 2, Applicant's admitted prior art and Yamane disclose the method according to Claim 1.

Applicant's admitted prior art does not expressly disclose the method further comprising the step of using the mappings to invalidate one or more particular cached content elements by invoking an invalidation function, wherein each invocation identifies one of the particular cached content elements using the second naming format, however, Yamane does disclose using the mappings to invalidate one or more particular cached content elements by invoking an invalidation function, wherein each invocation identifies one of the particular cached content elements using the first naming format (paragraph 0091, sentence beginning "The additional step of notifying the caching server..."; paragraph 0093, sentences beginning "One the list items have been converted..." and "The caching server can use this list...").

Claim 2 is rejected since the motivations regarding the obviousness of claim 1 also apply to claim 2.

Regarding claim 3, Applicant's admitted prior art discloses a method of addressing a name space mismatch between content servers and content caching systems, comprising steps of:

Art Unit: 2143

receiving a notification pertaining to one of cached content elements, wherein the notification identifies the content element using an identifier in the first identification format ("file name"; page 7, line 13 - page 8, line 2, sentence beginning "Content server and staging server, on the other hand,...") (page 8, lines 3-17, sentence beginning "If notification 310 indicates...").

Applicant's admitted prior art does not expressly disclose automatically learning mappings between a first identification format which identifies content elements accessible from one or more content servers and a second identification format which identifies content elements cached by a caching system, however, Applicant's admitted prior art does disclose mappings (page 13, line 10 - page 14, line 11, sentence beginning "Content servers of the prior art...") between a first identification format which identifies content elements accessible from one or more content servers ("file name"; page 7, line 13 - page 8, line 2, sentence beginning "Content server and staging server, on the other hand,...") and a second identification format which identifies content elements cached by a caching system ("URL"; page 7, line 13 - page 8, line 2, sentence beginning "Content caching systems use a name space...").

Art Unit: 2143

Yamane discloses automatically learning mappings ("change list" or "modification list") in the first identification format which identifies content elements accessible from one or more content servers (paragraphs 0010 and 0091)

Claim 3 is rejected since the motivations regarding the combination of Applicant's admitted prior art and Yamane regarding claim 1 also apply to claim 3.

Applicant's admitted prior art and Yamane do not disclose consulting the learned mappings using the identifier in the first identification format from the notification, thereby determining a corresponding identification of the cached content element, wherein the corresponding identification uses the second identification format and processing the received notification using the corresponding identification in the second identification format, however, Yamane does disclose consulting the learned mappings using the identifier in the first identification format from the notification to determine the identification of the cached content element and processing the received notification using the identification in the first identification format (paragraph 0090, sentence beginning "It is therefore useful to use change lists..."; paragraph 0091, sentence beginning "The additional step of notifying..."; paragraph 0093, sentence beginning "Once the list items have

Art Unit: 2143.

been..."). Yamane also discloses that the mappings that are converted from the second identification format ("file" or "directory") to the first identification format (paragraphs 0092 and 0093) and that a content server automatically learns mappings between a second identification format and the first identification format that correspond to one another (paragraph 0069).

Claim 3 is rejected since the motivation regarding the modification of the combined teachings of Applicant's admitted prior art and Yamane regarding claim 1 also apply to claim 3.

Claims 45 and 47 are also rejected since claims 45 and 47 recite a system and computer program product that contains substantially the same limitations as recited in claim 3.

Regarding claim 4, Applicant's admitted prior art and Yamane disclose the method according to Claim 3.

Applicant's admitted prior art does not disclose wherein the identifier in the first identification format identifies more than one of the cached content elements and the consulting step determines multiple corresponding identifications of the identified cached content elements, however, Yamane does disclose this limitation (paragraph 0093, sentence beginning "Once the list items have been...").

Claim 4 is rejected since the motivations regarding the combination of Applicant's admitted prior art and Yamane regarding claim 1 also apply to claim 4.

Applicant's admitted prior art and Yamane do not disclose wherein the processing step processes each of the identified cached content elements using the corresponding identifications in the second identification format, however, Yamane does disclose wherein the processing step processes each of the identified cached content elements using the corresponding identifications in the second identification format (paragraph 0090, sentence beginning "It is therefore useful to use change lists..."; paragraph 0091, sentence beginning "The additional step of notifying..."; paragraph 0093, sentence beginning "Once the list items have been..."). Yamane also discloses that the mappings that are converted from the second identification format ("file" or "directory") to the first identification format (paragraphs 0092 and 0093) and that a content server automatically learns mappings between a second identification format and the first identification format that correspond to one another (paragraph 0069).

Claim 4 is rejected since the motivations regarding the modification of the combined teachings of Applicant's admitted prior art and Yamane regarding claim 1 also apply to Claim 4.

Art Unit: 2143

Regarding claim 5, Applicant's admitted prior art and Yamane disclose the method according to Claim 3.

Applicant's admitted prior art discloses wherein the notification is a content update notification. (page 8, lines 3-17, sentence beginning "If notification 310 indicates...")

Regarding claim 6, Applicant's admitted prior art and Yamane disclose the method according to Claim 3.

Applicant's admitted prior art discloses wherein the notification is a content invalidation notification. (page 8, lines 3-17, sentence beginning "Or, if content is to be invalidated,...")

Regarding claim 7, Applicant's admitted prior art and Yamane disclose the method according to Claim 3.

Applicant's admitted prior art discloses wherein the notification is received from a content management system. (page 8, lines 3-17, sentence beginning "Suppose, for the purposes of this example, that caching system...")

Regarding claim 8, Applicant's admitted prior art and Yamane disclose the method according to Claim 3.

Applicant's admitted prior art discloses wherein a plurality of notifications are received, the plurality comprising at least one content update notification and at least one content invalidation notification, and wherein the plurality

Art Unit: 2143

of notifications use a consistent interface for conveying the notifications to the content caching system and also to the content servers. (page 8, lines 3-17, paragraphs beginning "CMS 320 therefore sends..." and "Suppose, for the purposes of this example, that caching system...")

Regarding claim 9, Applicant's admitted prior art and Yamane disclose the method according to Claim 3.

Applicant's admitted prior art discloses wherein the mappings comprise one or more entries. (Figure 4; page 13, line 10 - page 14, line 11, sentence beginning "Content servers of the prior art...")

Applicant's admitted prior art does not expressly disclose wherein the automatically learning step further comprises populating individual ones of the entries with the identification in the first identification format and the corresponding identification in the second identification format in response to receiving the content element to which the entry pertains; however, Applicant's admitted prior art does disclose mappings wherein individual ones of the entries contain the identification in the first identification format and the corresponding identification in the second identification format (Figure 4; page 13, line 10 - page 14, line 11, sentence beginning "Content servers of the prior art...").

Art Unit: 2143

Yamane discloses wherein the automatically learning step further comprises populating individual ones of the entries with the identification in the first identification format.

(paragraphs 0010 and 0091)

Claim 9 is rejected since the motivations regarding the combination of Applicant's admitted prior art and Yamane regarding claim 1 also apply to claim 9.

Applicant's admitted prior art and Yamane do not disclose wherein the automatically learning step further comprises populating individual ones of the entries with the identification in the first identification format and the corresponding identification in the second identification format in response to receiving the content element to which the entry pertains, however, Yamane does disclose populating individual ones of the entries with the identification in the first identification format as shown above. Yamane also discloses that the mappings that are converted from the second identification format ("file" or "directory") to the first identification format (paragraphs 0092 and 0093) and that a content server automatically learns mappings between a second identification format and the first identification format that correspond to one another (paragraph 0069). Yamane also discloses automatically learning a corresponding identification to the



Art Unit: 2143

content element to which the entry pertains in response to receiving the content element to which the entry pertains (paragraph 0089, the text "The caching server 200 receives the web page...[t]he caching server also stores that web page...the period of time for which the page is stored is a time period determined by...the content provider...by, for example, specifying an expiration period with the delivery of the document according to the HTTP protocol...").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Applicant's admitted prior art and Yamane to populate individual ones of the entries with the identification in the first identification format and the corresponding identification in the second identification format in response to receiving the content element to which the entry pertains. Yamane discloses that the mapping converted from the second identification format that only includes the first identification format allows the content caching server to efficiently utilize the mapping (paragraph 0092). Yamane also discloses automatically learning a corresponding identification to the content element to which the entry pertains in response to receiving the content element to which the entry pertains and automatically learning the mappings as shown above. In view of the teachings of Yamane, one of

Art Unit: 2143

ordinary skill in the art would recognize the advantage of efficiently utilizing the mapping and, since Yamane discloses that a content server from which the content caching system retrieves content receives a mapping of similar configuration, found it obvious to modify Yamane to include the second identification format in a mapping and populate entries within a mapping in response to receiving a content element from an entity such as a content server.

Regarding claim 10, Applicant's admitted prior art and Yamane disclose the method according to Claim 9.

Applicant's admitted prior art and Yamane do not expressly disclose wherein the populating step further comprises steps of extracting the identification in the first format from a response message which carries the received content element and using this extracted identification, along with the corresponding identification in the second identification format, as values of the populated entry, however, Yamane does disclose extracting a corresponding identification from a response message which carries the received content element (paragraph 0089, the text "The caching server 200 receives the web page...[t]he caching server also stores that web page...the period of time for which the page is stored is a time period determined by...the content provider...by, for example,

Art Unit: 2143

specifying an expiration period with the delivery of the document according to the HTTP protocol...) and using an identification in the first format as values of a populated entry (paragraphs 0010 and 0091). Yamane also discloses that the values of a populated entry are converted from the second identification format ("file" or "directory") to the first identification format (paragraphs 0092 and 0093) and that a content server automatically learns mappings between a second identification format and the first identification format that correspond to one another (paragraph 0069).

Claim 10 is rejected since the motivations regarding the modification of the combined teachings of Applicant's admitted prior art and Yamane regarding claim 9 also apply to claim 10.

Regarding claim 11, Applicant's admitted prior art discloses a method of addressing a name space mismatch between content caching systems and content servers, comprising steps of:

sending a content request from a content caching system ("proxy") to a content server, wherein the content request identifies requested content using a first identification in a first identification format ("URL"). (page 3, line 9 - page 4, line 5, sentence beginning "Therefore, proxy 115 sends 125 its own request for that content to a content server...")

Art Unit: 2143

Applicant's admitted prior art does not expressly disclose receiving a content response from the content server, wherein the content response provides the requested content and is augmented with a second identification of the requested content using a second identification format, however, Applicant's admitted prior art does disclose receiving a content response from the content server, wherein the content response provides the requested content (page 4, lines 6-15, sentence beginning "Returning to the description of the content request...") and wherein a second identification format is used to identify the request content at the content server (page 13, line 10 - page 14, line 11, sentence beginning "Content servers of the prior art...").

Yamane discloses receiving a content response from the content server, wherein the content response provides the requested content (paragraph 0089, the text "The caching server 200 receives the web page...[t]he caching server also stores that web page").

Applicant's admitted prior art also does not disclose creating an entry in a mapping, responsive to the receiving step, wherein the entry maps the second identification using the second identification format to the first identification using the first identification format, however, Applicant's admitted

Art Unit: 2143

prior art does disclose a mapping comprising an entry which maps the second identification using the second identification format to the first identification using the first identification format (page 13, line 10 - page 14, line 11, sentence beginning "Content servers of the prior art...").

Yamane discloses creating an entry in a mapping with the identification in the first identification format. (paragraphs 0010 and 0091)

Claim 11 is rejected since the motivations regarding the combination of Applicant's admitted prior art and Yamane regarding claim 1 also apply to claim 11.

Applicant's admitted prior art and Yamane do not disclose wherein the content response is augmented with a second identification of the requested content using a second identification format and creating an entry in a mapping, responsive to the receiving step, wherein the entry maps the second identification using the second identification format to the first identification using the first identification format, however, Yamane does disclose creating entries with the identification in the first identification format as shown above. Yamane also discloses that the mappings that are converted from the second identification format ("file" or "directory") to the first identification format (paragraphs 0092

Art Unit: 2143

and 0093) and that a content server automatically learns mappings between a second identification format and the first identification format that correspond to one another (paragraph 0069). Yamane also discloses wherein a content response is augmented with a corresponding identification of the requested content from the content server wherein the content response provides the requested content (paragraph 0089, the text "The caching server 200 receives the web page...[t]he caching server also stores that web page...the period of time for which the page is stored is a time period determined by...the content provider...by, for example, specifying an expiration period with the delivery of the document according to the HTTP protocol...").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Applicant's admitted prior art and Yamane wherein the content response is augmented with a second identification of the requested content using a second identification format and creating an entry in a mapping, responsive to the receiving step, wherein the entry maps the second identification using the second identification format to the first identification using the first identification format. Yamane discloses that the mapping converted from the second identification format that

Art Unit: 2143

only includes the first identification format allows the content caching server to efficiently utilize the mapping (paragraph 0092). Yamane also discloses automatically learning a corresponding identification to the content element to which the entry pertains in response to receiving the content element to which the entry pertains and automatically learning the mappings as shown above. In view of the teachings of Yamane, one of ordinary skill in the art would recognize the advantage of efficiently utilizing the mapping and, since Yamane discloses that a content server from which the content caching system retrieves content receives a mapping of similar configuration, found it obvious to modify Yamane to augment a content response received from a content server to include a second identification of the requested content using a second identification format and to include the second identification format in a mapping.

Claims 46 and 48 are also rejected since claims 46 and 48 recite a system and computer program product that contains substantially the same limitations as recited in claim 11.

Regarding claim 12, Applicant's admitted prior art and Yamane disclose the method according to Claim 11.

Applicant's admitted prior art and Yamane do not disclose wherein the content request signifies an ability to process the

Art Unit: 2143

augmented content response, however, Yamane suggests that the content caching system is able to process any sort of communication technique involving the identification of the requested content (paragraph 0091).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combine teachings of Applicant's admitted prior art and Yamane to have the content request includes an ability of process an augmented content response. In view of the teachings of Yamane as shown above regarding claim 12, one of ordinary skill in the art would have found it obvious to include an identification of an ability by the content caching system to process an augmented content response since Yamane discloses that the content caching system has the ability to process the identification mappings in any sort of communication format including content responses from an entity such as a content server from which the content caching system retrieves content.

Regarding claim 13, Applicant's admitted prior art and Yamane disclose the method according to Claim 12.

Applicant's admitted prior art and Yamane do not disclose wherein the ability is signified using a message header of the content request, however, Yamane does disclose wherein the content request includes a message header which includes an



Art Unit: 2143

identification (paragraph 0089, sentence beginning "The period of time for which...").

Claim 13 is rejected since the motivations regarding the modification of the combined teachings of Applicant's admitted prior art and Yamane regarding claim 12 also apply to claim 13.

Regarding claim 14, Applicant's admitted prior art and Yamane disclose the method according to Claim 13.

Applicant's admitted prior art and Yamane do not disclose wherein the message header specifies that the caching system is content distribution aware, however, Yamane suggests that the caching system is able to process any sort of communication technique involving the identification of the requested content (paragraph 0091).

Claim 14 is rejected since the motivations regarding the modification of the combined teachings of Applicant's admitted prior art and Yamane regarding claim 12 also apply to claim 14.

Regarding claim 15, Applicant's admitted prior art and Yamane disclose the method according to Claim 13.

Applicant's admitted prior art does not disclose wherein the message header is a Hypertext Transfer Protocol ("HTTP") header, however, Yamane does disclose this limitation (paragraph 0089, sentence beginning "The period of time for which...").

Art Unit: 2143

Claim 15 is rejected since the motivations regarding the combination of the teachings of Applicant's admitted prior art and Yamane regarding claim 1 also apply to claim 15.

Regarding claims 16-22, Applicant's admitted prior art and Yamane do not expressly disclose wherein the ability is signified using syntax of a markup language, wherein the markup language is Hypertext Markup Language ("HTML") or XML ("Extensible Markup Language"), the syntax comprises a "META" tag using an "HTTP-EQUIV" or "NAME" attribute syntax or wherein the syntax comprises a specially-denoted comment or wherein the ability is signified using a cookie on the content request.

It would have been obvious to one skilled in the art at the time the invention was made to use the syntax of a markup language, a specially denoted comment, or a cookie to signify an ability because the Applicant has not disclosed that using the limitation undisclosed in Applicant's admitted prior art and Yamane provides any sort of an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with using the content request described in Yamane as recited in the claim because including an identification such as an ability to process information with

Art Unit: 2143

the content response could be performed equally well regardless of the type of syntax used. See MPEP 2183.

Regarding claim 23, Applicant's admitted prior art and Yamane disclose the method according to Claim 11.

Applicant's admitted prior art does not disclose wherein the augmented content response provides the second identification using a header, however, Yamane does disclose wherein the content request includes a message header which includes an identification (paragraph 0089, sentence beginning "The period of time for which..."). Yamane does disclose that the mappings that are converted from the second identification format ("file" or "directory") to the first identification format (paragraphs 0092 and 0093) and that a content server automatically learns mappings between a second identification format and the first identification format that correspond to one another (paragraph 0069).

Claim 23 is rejected since the motivations regarding the modification of the combined teachings of Applicant's admitted prior art and Yamane regarding claims 11 and 12 also apply to claim 23.

Regarding claims 24-26, Applicant's admitted prior art and Yamane do not disclose wherein the header comprises an extended cache control header or a file identification header, wherein

Art Unit: 2143

the file identification header is a Hypertext Transfer Protocol ("HTTP") header.

It would have been obvious to one skilled in the art at the time the invention was made to use these specific types of headers because the Applicant has not disclosed that using the limitation undisclosed in Applicant's admitted prior art and Yamane provides any sort of an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the header described in Yamane as recited in the claim because the method of providing the second identification would be performed equally well regardless of the type of header used. See MPEP 2183.

Regarding claims 27-33, Applicant's admitted prior art and Yamane do not disclose wherein the augmented content response provides the second identification using syntax of a markup language, wherein the markup language is Hypertext Markup Language ("HTML") or XML ("Extensible Markup Language") and the syntax comprises a "META" tag using an "HTTP-EQUIV" or "NAME" attribute syntax or using a specially-denoted comment or a cookie.

It would have been obvious to one skilled in the art at the time the invention was made to use a markup language syntax, a

Art Unit: 2143

specially denoted comment, or a cookie to provide a second identification because the Applicant has not disclosed that using the limitation undisclosed in Applicant's admitted prior art and Yamane provides any sort of an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the method of providing the second identification within the content response described in Yamane as recited in the claim because including a second identification with the content response would be performed equally well regardless of the type of syntax used. See MPEP 2183.

Regarding claim 34, Applicant's admitted prior art and Yamane disclose the method according to Claim 11.

Applicant's admitted prior art discloses the method further comprising the step of caching the received content at the content caching system, responsive to the receiving step (page 4, lines 16-20, sentences beginning "After proxy 115 receives the content..." and "In addition, proxy 115 may store 145 a locally-addressable copy...").

Regarding claim 35, Applicant's admitted prior art and Yamane disclose the method according to Claim 34.

Art Unit: 2143

Applicant's admitted prior art discloses receiving an update notification for a selected previously-cached content at the caching system, wherein the update notification identifies the selected previously-cached content using a selected identification in the second identification format ("file name"; page 7, line 13 - page 8, line 2, sentence beginning "Content server and staging server, on the other hand,...") (page 8, lines 3-17, sentence beginning "If notification 310 indicates").

Applicant's admitted prior art does not disclose consulting the mapping, using the selected identification as the second identification in the second identification format, to retrieve the first identification in the first identification format and using the retrieved first identification to request an update of the selected previously-cached content, however, Applicant's admitted prior art does disclose mappings (page 13, line 10 - page 14, line 11, sentence beginning "Content servers of the prior art...") between a first identification format ("URL"; page 7, line 13 - page 8, line 2, sentence beginning "Content caching systems use a name space...") and a second identification format ("file name"; page 7, line 13 - page 8, line 2, sentence beginning "Content server and staging server, on the other hand,...").

Art Unit: 2143

Yamane discloses consulting the mapping to retrieve the first identification in the first identification format (paragraph 0090, sentence beginning "It is therefore useful to use change lists..."; paragraph 0091, sentence beginning "The additional step of notifying..."; paragraph 0093, sentence beginning "Once the list items have been...") and using the retrieved first identification to request an update of the selected previously-cached content (paragraph 0089, sentence beginning "Based on the request and its own configuration..."; paragraph 0090, sentence beginning "It is therefore useful to use change lists..."; paragraph 0091, sentence beginning "The additional step of notifying...")

Claim 35 is rejected since the motivations regarding the combined teachings of Applicant's admitted prior art and Yamane regarding claim 1 also apply to claim 35.

Applicant's admitted prior art and Yamane do not disclose consulting the mapping, using the selected identification as the second identification in the second identification format, to retrieve the first identification in the first identification format, however, Yamane does disclose that the mapping is converted from the second identification format ("file" or "directory") to the first identification format (paragraphs 0092 and 0093) and that the content server automatically learns

Art Unit: 2143

mappings between a second identification format and the first identification format (paragraph 0069).

Claim 35 is rejected since the motivations regarding the modification of the combined teachings of Applicant's admitted prior art and Yamane regarding claim 1 also apply to claim 35.

Regarding claim 36, Applicant's admitted prior art and Yamane disclose the method according to Claim 35.

Applicant's admitted prior art and Yamane do not disclose wherein the using step further comprises steps of sending a new content request to the content server, wherein the new content request identifies the requested content using the retrieved first identification; receiving a new content response from the content server, wherein the new content response provides the requested updated content; and caching the received updated content; however, Applicant's admitted prior art does disclose sending a content request to the content server, wherein the new content request identifies the requested content using the retrieved first identification (page 3, line 9 - page 4, line 5, sentence beginning "Therefore, proxy 115 sends 125 its own request for that content to a content server"); receiving a new content response from the content server, wherein the new content response provides the requested updated content (page 4, lines 6-15, sentence beginning "Returning to the description of



Art Unit: 2143

the content request..."); and caching the received content (page 4, lines 16-20, sentences beginning "After proxy 115 receives the content..." and "In addition, proxy 115 may store 145 a locally-addressable copy..."). Yamane discloses wherein a caching system is notified when cached content is updated (paragraph 0089, sentence beginning "Based on the request and its own configuration..."; paragraph 0090, sentence beginning "It is therefore useful to use change lists..."; paragraph 0091, sentence beginning "The additional step of notifying...").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Applicant's admitted prior art and Yamane to sending a new content request and receive a new content response provided updated content and caching the received updated content. In view of the teachings of Yamane, one of ordinary skill in the art would have it obvious to retrieve and cache updated content because the caching system is notified that the currently cached data should be updated and that it would logically follow that the caching server would attempt to retrieve the updated content in order to have the most updated copy of the content.

Regarding claim 37, Applicant's admitted prior art and Yamane disclose the method according to Claim 34.

Art Unit: 2143

Applicant's admitted prior art discloses receiving an invalidation notification for a selected previously-cached content at the caching system, wherein the invalidation notification identifies the selected previously-cached content using a selected identification in the second identification format ("file name"; page 7, line 13 - page 8, line 2, sentence beginning "Content server and staging server, on the other hand,..."); (page 8, lines 3-17, sentence beginning "Or, if the content is to be invalidated,...").

Applicant's admitted prior art does not disclose consulting the mapping, using the selected identification as the second identification in the second identification format, to retrieve the first identification in the first identification format and using the retrieved first identification to request an invalidation of the selected previously-cached content, however, Applicant's admitted prior art does disclose mappings (page 13, line 10 - page 14, line 11, sentence beginning "Content servers of the prior art...") between a first identification format ("URL"; page 7, line 13 - page 8, line 2, sentence beginning "Content caching systems use a name space...") and a second identification format ("file name"; page 7, line 13 - page 8, line 2, sentence beginning "Content server and staging server, on the other hand,...").

Art Unit: 2143

Yamane discloses consulting the mapping to retrieve the first identification in the first identification format (paragraph 0090, sentence beginning "It is therefore useful to use change lists..."; paragraph 0091, sentence beginning "The additional step of notifying..."; paragraph 0093, sentence beginning "Once the list items have been...") and using the retrieved first identification to request an invalidation of the selected previously-cached content (paragraph 0091, sentence beginning "The additional step of notifying the caching server..."; paragraph 0093, sentences beginning "One the list items have been converted..." and "The caching server can use this list...")

Claim 37 is rejected since the motivations regarding the modification of the combined teachings of Applicant's admitted prior art and Yamane regarding claim 1 also apply to claim 37.

Applicant's admitted prior art and Yamane do not disclose consulting the mapping, using the selected identification as the second identification in the second identification format, to retrieve the first identification in the first identification format, however, Yamane does disclose that the mapping is converted from the second identification format ("file" or "directory") to the first identification format (paragraphs 0092 and 0093) and that the content server automatically learns

Art Unit: 2143

mappings between a second identification format and the first identification format (paragraph 0069).

Claim 37 is rejected since the motivations regarding the modification of the combined teachings of Applicant's admitted prior art and Yamane regarding claim 1 also apply to claim 37.

Regarding claim 38, Applicant's admitted prior art and Yamane disclose the method according to Claim 11.

Applicant's admitted prior art discloses wherein the first identification format comprises a Uniform Resource Locator ("URL") format. ("URL") (page 7, line 13 - page 8, line 2, sentence beginning "Content caching systems use a name space...")

Regarding claim 39, Applicant's admitted prior art and Yamane disclose the method according to Claim 11.

Applicant's admitted prior art discloses wherein the second identification format comprises a directory structure format. (page 13, line 10 - page 14, line 11, sentence beginning "Content servers of the prior art...")

Regarding claim 40, Applicant's admitted prior art and Yamane disclose the method according to Claim 11.

Applicant's admitted prior art discloses wherein the second identification format comprises a file path and file name

Art Unit: 2143

format. (page 13, line 10 - page 14, line 11, sentence beginning "Content servers of the prior art...")

Regarding claim 41, Applicant's admitted prior art and Yamane disclose the method according to Claim 11.

Applicant's admitted prior art discloses wherein the second identification is a file path and a file name. (page 13, line 10 - page 14, line 11, sentence beginning "Content servers of the prior art...")

Regarding claim 44, Applicant's admitted prior art and Yamane disclose the method according to Claim 11.

Applicant's admitted prior art discloses the method further comprising steps of:

receiving, at the content server, the sent content request; obtaining, by the content server, the requested content; preparing a response message, by the content server, to transmit the obtained content; and sending the prepared response message, including the obtained content, from the content server. (page 4, lines 6-15, sentence beginning "Returning to the description of the content request...")

Applicant's admitted prior art does not disclose wherein the response message is augmented with the second identification in the second identification format, however, Yamane discloses wherein a content response is augmented with a corresponding

Art Unit: 2143

identification of the requested content from the content server wherein the content response provides the requested content (paragraph 0089, the text "The caching server 200 receives the web page...[t]he caching server also stores that web page...the period of time for which the page is stored is a time period determined by...the content provider...by, for example, specifying an expiration period with the delivery of the document according to the HTTP protocol...").

Claim 44 is rejected since the motivations regarding the modification of the combined teachings of Applicant's admitted prior art and Yamane regarding claim 11 also apply to claim 44.

1. Claim 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art and Yamane as applied to claim 11 above, and further in view of US Patent 6 023 506 to Ote et al.

Regarding claim 42, Applicant's admitted prior art and Yamane disclose the method according to Claim 11.

Applicant's admitted prior art and Yamane do not disclose wherein the second identification is a substituted file path and file name, however, Applicant's admitted prior art does disclose wherein the second identification is a file path and file name (page 13, line 10 - page 14, line 11, sentence beginning "Content servers of the prior art...")

Art Unit: 2143

Ote discloses a substituted file path and file name (column 2, lines 23-30 and 56-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of these references since Ote discloses that using a substituted file path and file name enables protection from unauthorized access (column 2, lines 61-64). In view of these specific advantages and that the references are directed to using file names to index data, one of ordinary skill would have been motivated to combine these references and would have considered them to be analogous to one another based on their related fields of endeavor.

Regarding claim 43, Applicant's admitted prior art and Yamane disclose the method according to Claim 42.

Applicant's admitted prior art and Yamane does not disclose wherein the substituted file path and file name is an encrypted file path and file name, however, Applicant's admitted prior art does disclose wherein the second identification is a file path and file name (page 13, line 10 - page 14, line 11, sentence beginning "Content servers of the prior art...")

Ote discloses wherein the substituted file path and file name is an encrypted file path and file name (column 2, lines 23-30 and 56-64).

Art Unit: 2143

Claim 43 is rejected since the motivations regarding combining the teachings of Applicant's admitted prior art, Yamane, and Ote regarding 42 also apply to claim 42.

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following prior art teaches integrating physical and virtual name spaces:

US Patent 5 465 365 to Winterbottom;

US Patent 6 256 031 to Meijer et al;

US Patent 6 408 298 to Van et al;

Apache Foundation. "Mapping URLs to Filesystem Locations",  
Apache HTTP Server Version 1.3, released 8 June 1998,  
<<http://httpd.apache.org/docs/urlmapping.html>>, 4 pages.

The following prior art teaches the state of the art in content management systems:

US Patent 6 308 188 to Bernardo et al;

US Patent Application Publication 2002/0194382 to Kausik et al;

Goland, Y. et al. "Request for Comments (RFC) 2518: HTTP Extensions for Distributed Authoring -- WEBDAV", published by Network Working Group, <<http://www.faqs.org/rfcs/rfc2518.html>>.



Art Unit: 2143

The following prior art teaches the state of the art in content caching systems and mappings using URLs:

US Patent 5 864 852 to Luotonen;

US Patent 6 195 707 to Minh;

US Patent 6 330 561 to Cohen et al;

US Patent 6 385 642 to Chlan et al;

US Patent 6 578 113 to Krishnamurthy et al;

US Patent 6 839 700 to Doyle et al;

Microsoft Corporation. "Persistent URL Cache Functions", Microsoft Win32 Internet Programmer's Reference, 1996, <<http://web.archive.org/web/19970605045634/http://www.graphcomp.com/info/specs/ms/inetr007.htm>>, 11 pages;

Apache Foundation. "Apache module mod\_proxy", Apache HTTP Server Version 1.3, released 8 June 1998, <[http://httpd.apache.org/docs/mod/mod\\_proxy.html](http://httpd.apache.org/docs/mod/mod_proxy.html)>, 13 pages.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George C. Neurauter, Jr. whose telephone number is (571) 272-3918. The examiner can normally be reached on Monday through Friday from 9AM to 5:30PM Eastern.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571) 272-3923. The fax phone number for the

Art Unit: 2143

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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